DOCUMENT RESUME

ED 113 046 PS 008 108

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TITLE Preoperational Graphic Representation: From Intellectual Realism to Visual Realism in Draw a House-Tree Task.
PUB DATE Jun 75
NOTE 8p.; Paper presented at the Annual Symposium of the Jean Piaget Society (5th, Philadelphia, Pennsylvania, June 13-14, 1975)

EDRS PRICE MF-$0.76 HC-$1.58 Plus Postage
DESCRIPTORS *Cognitive Development; *Cognitive Measurement; Cognitive Tests; *Early Childhood Education; *Freehand Drawing; Predictive Validity; *Realism; Test Reliability; Test Validity
IDENTIFIERS Decentering; Developmental Stages; *Piaget (Jean)

ABSTRACT

In a pilot study of children's drawings of "a house with a tree behind it," Piagetian sequence (scribbling, fortuitous realism, failed realism, intellectual realism, and visual realism) was tentatively supported. Children's strategies in decentering from intellectual to visual realism were noted. The study reported in this paper was undertaken to investigate: (1) the developmental sequence in House-Tree task; (2) its relationship with Stanford Binet, Peabody, and four Piagetian measures; and (3) synchronous development among these measures. Data from 49 subjects aged, 3 1/2-6 1/2 years, were used for analysis. Developmental sequence for House-Tree task and relationship among these measures was confirmed. Some evidence for synchronous development at a younger age level was found. The House-Tree task, because of its simplicity, ease, and economy in administering and scoring, has potential for assessing the cognitive development of young children. (Author/ED)

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Preoperational Graphic Representation: From Intellectual Realism to Visual Realism in Draw a House-Tree Task

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a. Statement of Problem

Graphic representation is one of the five semiotic functions of the preoperational period. Yet very few Piagetian scholars have investigated this area. With Luquet, Piaget suggests the following stages in children's drawings:

1. Scribbling.
2. Fortuituos realism (some meaning is discovered in the act of scribbling).
3. Failed realism or synthetic incapacity (parts of a figure are juxtaposed or drawn all over the page).
4. Intellectual realism or 'transparencies' (intuitive topological relations are maintained with little or no perspective).
5. Visual realism (some awareness of perspective is evident).

In an exploratory study of 30 Ss, age three to eight years, this stage sequence was tentatively confirmed in their drawings of "a house with a tree behind it." One intriguing finding was the strategies used in decentering from intellectual to visual realism. Ss functioning within the first three stages seemed unaware of the 'front-behind' conflict, but those aware of the difficulty used the following strategies:

1. Refusing to draw.

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2. Ignoring or changing the instruction (drawing the tree to the left or to the right of the house).
3. Compromise solution (drawing the house on one side of paper and the tree on the reverse side; or, drawing the tree first and then superimposing the house on it).
4. Partial solution (drawing the tree so close to the house that it almost appears partly hidden behind the house).
5. Approximate perspective (tree trunk is hidden behind the house, only the top of the tree is visible).

Are these strategies a matter of personal preference or developmental necessity? Is some decentering process at work? Another study was undertaken to investigate: (1) if Piagetian sequence may be inferred from children's drawings of "a house with a tree behind it": (2) if this task performance is related to other cognitive measures; and (3) if the development is parallel among these measures.

b. Subjects and Procedure

Sixty-seven children, 3½-6½ years old, attending two local nursery schools and one kindergarten were individually tested. Complete data on 49 children were available for analysis. The following tasks were given:

1. Stanford Binet (SB).
2. Peabody Picture Vocabulary Test (PPVT).

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3. Single Seriation (SS) - 7 graduated cardboard trees to be planted in a row from the biggest to the samllest. Score 0-5.

4. Double Seriation (DS) - 7 graduated cardboard pots to be matched with their own right tree. Score 0-5.

5. Additive Seriation (AS) - 6 more trees to be inserted in the row of trees in 3 above. Score 0-5.

6. Number (NR) - 7 trees and 7 pots; three transformations--extension, collapsing and rotation. Score 0-5.

7. House-Tree (HT) - draw a house with a tree behind it. Score 0-10 based on Piagetian sequence for drawing and strategies derived from the exploratory study.

One person administered (1) and (7); another, 2-6. This ensured consistency in administering and scoring. Task performance (1-7) as a function of sex and age (three levels arbitrarily chosen-I. 40-55 months; II. 56-65 months; and III. 66-78 months), were analyzed by a t test, ANOVA, and Least Square Differences (LSD). Pearson product moment correlation coefficients were also computed.

c. Results

Sex differences (pooled estimate variance t test) were not significant in any task. ANOVA comparisons among tasks x age showed all F ratios to be significant (P.001). Further analysis by LSD procedure indicated that

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the three age levels were significantly (P.05) differentiated on HT, SB, PPVt, SS, and DS. Also, the mean scores on all tasks increased from one level to another in an ordered direction (I--II--III). Thus there is some support for a developmental sequence in HT and other cognitive measures.

For total sample, the correlation coefficients between HT and other measures were also significant (P.001) and ranged from .53 to .75. Correlations for each pair of measures were also significant (P.001) and ranged from .42 to .73. These positive and significant correlations suggest some degree of relationship between HT and other cognitive measures. For subsamples the correlation coefficients between HT and other measures were computed. At level I,four of the six correlations were significant (P. 05) and ranged from .45 to .75. At level II, two of the six correlations, .63 and .64, were significant (P.01). At level III, the correlations were low and nonsignificant. There is some support, at level I, for the parallel development of HT and, SB, PPVT, SS, DS and possible, NR. At level II and III, there is some evidence for a similar parallel development between HT and two measures, SB and NR, only.

d. Significance and implications of results

A developmental sequence in HT task is inferred from

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an ordered increase in mean scores (I→II→III) and also from significant differences between task performances at three levels. Positive and significant correlations between HT and other tasks, and between each pair of tasks, suggest relationship among these cognitive measures. Similar competencies are being assessed by HT task and other measures; or, perhaps one measure is just as good as the other.

Synchronous development between HT and other cognitive measures is suggested at level I; but for level II and III, the tendency is not so clear. This may have resulted from using small subsamples, arbitrarily divided into three levels. Two age levels during pre-operational period might have been more consistent with the Piagetian theory. For more conclusive evidence longitudinal studies will be necessary. HT task is simple, economical, uses minimum language (of special advantage with children or Ss with language inadequacies), and has potential for cognitive uses in conjunction with Buck's House-Tree-Person projective measure of personality and family relations. Further research will have to be done before House-Tree task could be used as a preschool assessment measure.

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Abstract

In a pilot study of children's drawings of "a house with a tree behind it," Piagetian sequence - scribbling, fortuitous realism, failed realism, intellectual realism, and visual realism was tentatively supported. Children's strategies in decentering from intellectual to visual realism were noted. This study was undertaken to investigate: 1. the developmental sequence in House-Tree task; 2. its relationship with Stanform Binet, Peabody, and four Piagetian measures; and 3. synchronous development among these measures. Data from 49 Ss, age 3½ - 6½ years, were used for analysis. Developmental sequence for House-Tree task and relationship among these measures was confirmed. Some evidence for synchronous development at younger age level was found. Longitudinal studies only can provide conclusive evidence. House-Tree task, because of its simplicity, ease, and economy in administering and and scoring, has potential for assessing the cognitive development of younger children.

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